Project Introduction

Energid Technologies will create a comprehensive software infrastructure for rapid validation of robotic designs. The software will support push-button validation through existing commercial design software, such as SolidWorks. After validation is invoked through the design-tool GUI, the robot design will transfer to separate networked software for analysis. An interface will be provided for communicating with many types of commercial analysis software, and Energid will provide its own analysis software through the common interface. This will allow interactive placement of any number of end effectors on any number of mobile or fixed-base mechanisms, each with any number of kinematic links and branches. Energid's validation software will provide dynamic simulation, including articulated-body and impact dynamics. The software will allow link descriptions, end-effector descriptions, control algorithms, and the environment to be arbitrarily exchangeable as modules. The Extensible Markup Language (XML) will be used for configuration, data transfer, and exchange.

Primary U.S. Work Locations and Key Partners

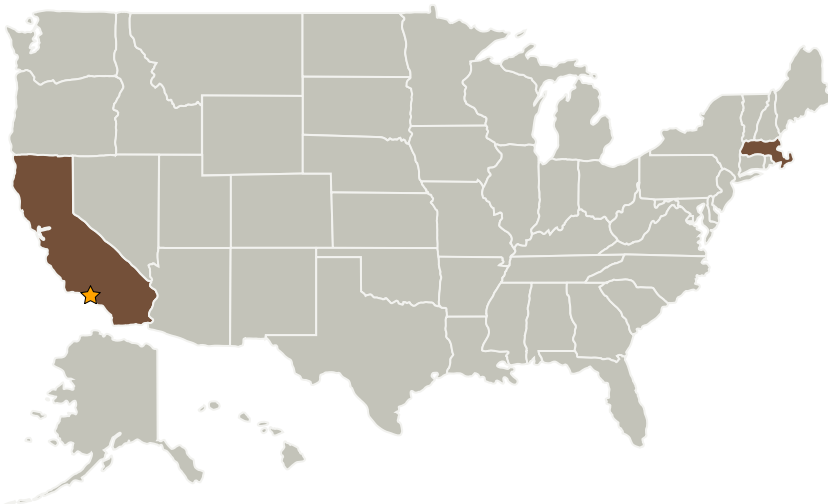| Organizations Performing Work	Role	Type	Location
⭐Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
Energid Technologies	Supporting Organization	Industry	Cambridge, Massachusetts

Rapid Robot Design Validation, Phase I

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Primary U.S. Work Locations	
California	Massachusetts

Project Management

Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
James English

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  └ TX11.1 Software Development, Engineering, and Integrity
    └ TX11.1.2 Verification and Validation of Software systems